Federation Management Controller (FMC) Feedback from C2 Experiment

Mr. Ron Sell, AEgis Research Corp.

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FMC Objectives

- Provide an interface to fully exercise the MOM functionality.

- Provide an interface to give visibility to all MOM attributes.

- Provide federation management support in the HLA C2 Experiment.

FMC Development

- **Strategy:**
  - Tool depends on MOM in RTI 1.0.
  - Basic set of views that exercise all of MOM data.
  - Assumes that tool and federation will use all MOM data.

- **Results:**
  - Support education on MOM.
  - Solicits user feedback on views.
  - Identifies tailoring for collection of information.
  - Solicits other FM functions => MOM features.

FMC Application

- **FMC Compliance Testing:**
  - Completed HLA Compliance Certification with GTRI.

- **FMC Operational Testing:**
  - FMC was used to Create, Pause, Resume, and Destroy federation execution.
  - FMC was used to provide initialization and execution control interactions.
  - FMC was used to synchronize federation to wall-clock.
  - FMC was helpful in error checking and integration debugging of the C2 Experiment.

FMC Application

MOM Functional Evaluation:

- **FMC sent MOM Interactions for the following:**
  - Modify federates' time regulation and constraint setting
  - Modify federates' lookahead value
  - Determine publication and subscription interests

- **FMC used MOM Alert interactions for federation error checking and integration debugging of C2 Experiment.**

- **FMC used MOM attributes to verify proper time settings.**

- **FMC used MOM attributes to verify proper object handling.**

- **FMC used MOM attribute updates to determine if federate was ticking RTI properly.**

FMC Application

Feedback from C2 Experiment:

- **FMC satisfied stated objectives.**
  - Provided visibility to and exercised MOM functionality.
  - Provided basic FM support to the C2 Experiment.

- **FOM specific information is desired in an FMC component to manage a federation.**
  - MOM functionality was important and useful, but not comprehensive.
  - FOM specific information should compliment MOM information to provide comprehensive FM functionality.

FMC Application

Feedback from C2 Experiment:

- **Suggested functionality to be included in a comprehensive FM tool:**
  - Provide visibility to MOM information.
  - Provide visibility to FOM information.
  - Active roles in all functional areas of HLA: FM, DM, ObjM, OwnM, TM, and DDM.
  - Extensible to interact with FOM specific object structures and interactions.

Conclusions

- **FMC completed HLA Compliance Certification and provided basic federation management to the C2 Experiment.**

- **FMC provided visibility to the MOM object structure and access to the MOM interaction functionality.**

- **MOM provided useful information that was used in managing the C2 federation.**

- **Federation Management tools should complement MOM information with FOM information to provide comprehensive FM functionality.**